

REMARKS

The application has been reviewed carefully in light of the Office Action dated July 26, 2005. Claims 1-20 were pending. By this Amendment, claim 4 has been canceled, without prejudice or disclaimer, new claim 21 has been added, and claims 1, 3, 7, 9-14 and 17-19 have been amended to place the claims in better form for examination and/or to clarify the claimed invention. Accordingly, claims 1-3 and 5-21 are now pending, with claims 1, 3, 11, 13, 18, 19 and 21 being in independent form.

Claims 1, 3, 7, 10-14 and 17-19 were objected to as having informalities.

By this Amendment, claims 1, 3, 7, 10-14 and 17-19 have been amended to correct the informalities noted in the Office Action.

Withdrawal of the objection to the claims is respectfully requested.

Claims 1-6, 9, 10, 12 and 18 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 6,679,600 to Regimbal in view of U.S. Patent No. 5,143,904 to Minato et al. Claims 7, 13, 14, 16, 17, 19 and 20 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Regimbal in view of Minato and further in view of U.S. Patent No. 6,338,545 to Sekiya ("Sekiya '545"). Claims 8 and 15 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Regimbal in view of Minato and Sekiya and further in view of U.S. Patent No. 6,036,302 to Hotomi.

This application relates to ink-jet recording apparatuses (including ink-jet copiers and recording media for such apparatuses) adapted with assorted features which enable recording on both sides of a recording medium. For example, such an apparatus typically conveys a recording medium, one side of which has been already printed, through a conveyance path into the printing unit again in order to print an image onto the other side of the recording medium. In order to allow the recording surface on the one side to dry adequately, the recording medium is

temporarily stopped in the conveyance path before the recording medium is conveyed to the printing unit again. Thus, it is possible to avoid a problem in double side printing wherein image quality is degraded from printing onto the other side before the recording surface on the one side is well dried. Each of independent claims 1, 3 and 13 includes these features.

Regimbal, as understood by Applicant, is directed to techniques for producing printed images having increased gloss level. Regimbal discloses a mechanism for double-sided printing.

Regimbal, column 3, line 64 through column 4, line 4 describes a mechanism, including a reversing leg 66, a diverter 68 and rollers 70, by which a sheet of image media can reverse in direction of conveyance, without turning the sheet upside down, for double-sided printing.

Applicant does not find teaching or suggestion in Regimbal, however, of conveyance means configured to temporarily stop the recording medium in the conveyance path to allow the first side of the recording medium to dry before the recording medium is conveyed to the printing unit for printing on the second side of the recording medium, as provided by amended claims 1, 3 and 13.

Minato, as understood by Applicant, is directed to a dye image-receiving sheet for thermal transfer printing systems. Minato was cited in the Office Action as purportedly disclosing the recording media recited in claims 1-3 and 18 of this application.

Sekiya '545 is directed to various improvements to liquid jet recording techniques which enable high-quality and high-resolution images to be produced.

Hotomi, as understood by Applicant, is directed to ink-jet techniques wherein a piezoelectric member is deformed in response to a voltage to discharge an ink drop, and a device for generating an electric field for stabilizing the flight of the ink drop. Hotomi was cited in the Office Action as purportedly disclosing nozzles and a recording head having the dimensions recited in claims 8 and 15 of this application.

However, Applicant does not find teaching or suggestion in the cited art of conveyance means configured to temporarily stop the recording medium in the conveyance path to allow the first side of the recording medium to dry before the recording medium is conveyed to the printing unit for printing on the second side of the recording medium, as provided by amended claims 1, 3 and 13.

Applicant respectfully submits that independent claims 1, 3 and 13, and the claims depending therefrom, are patentable over the cited art, for at least the above-stated reasons.

In addition, regarding claim 6, while regimbal discloses an in-feed tray 21 and an out-feed tray 22, applicant does not find a “reference 20” in Fig. 1 of Regimbal, and does not find teaching or suggestion in Regimbal of a containing member which temporarily contains the recording medium on the conveyance path. The out-feed tray 22 of Regimbal is not a part for temporarily containing a recording medium, and also the reversing leg 60 of Regimbal does not have the relevant function. Regimbal simply does not disclose or suggest a containing member which temporarily contains the recording medium on the conveyance path, as provided by claim 6 of this application.

Regarding claims 9 and 17, reference 51 in Fig. 1 of Regimbal corresponds to a hot roller. However, there is no disclosure for a heating range thereof, and there is simply no teaching or suggestion in Regimbal of operation to cover a range larger than the printing width of the recording medium, as provided by claims 9 and 17 of the present application.

Regarding claims 10 and 13, Regimbal merely discloses that a traveling direction of paper is reversed, as shown in Fig. 1 via an arrow 30 indicated at references 66, 68. However, Regimbal does not disclose or suggest changing orientation of paper by a rotation of 180 degrees, as provided by claims 10 and 13 of the present application.

Regarding claim 12, Regimbal merely discloses that double-sided printing is achieved by

reversing a direction of travel of the paper, as shown by arrow 30 in figure 1, at references 66, 68. Regimbal does not disclose or suggest that a paper conveyance path is a twisted path, and thus, paper is twisted during conveyance thereof and a reverse side becomes a printing side, as provided by claim 10 of the present application, for double-sided printing.

Regarding independent claims 18 and 19, Minato discloses a thermal sublimation printing paper, which is simply not relevant to inkjet printing, to which the recording media of claims 18 and 19 of the present application are directed. Therefore, the teachings of Minato are not relevant for a configuration and features of the recording media of claims 18 and 19, nor for a problem to which the recording media of claims 18 and 19 is directed, and so forth. By the same reasoning, it would not have been obvious to look to the teachings of Minato in connection with the ink-jet recording apparatuses of claims 1, 3 and 13.

Further, thermal sublimation printing does not include double-sided printing, to which the recording media of claims 18 and 19 of the present application are directed.

In addition, regarding claim 18, Minato does not disclose granular material coated inside of the base member and also both sides of the base member.

Regarding claim 19, Regimbal does not disclose or suggest a recording medium used in an ink-jet copier or a multi-nozzle-type ink-jet recording head.

Applicant respectfully submits that independent claims 18 and 19, and the claims depending therefrom, are patentable over the cited art, for at least the above-stated reasons.

In addition, as can be seen from a paper sectional configuration shown in Figs. 1 and 2 of Minato, Minato does not have a configuration in which both sides of paper are symmetrical, such as provided by claims 2 and 20 of the present application.

The Office Action indicated that claim 11 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

By this Amendment, claim 11 has been amended to correct informalities therein, and by rewriting the claim in independent form including all of the limitations of the base claim and any intervening claims.

In view of the amendments to the claims and remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition. The Office is hereby authorized to charge any fees, including additional claims fees, that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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